

IMPORTANT:
Read Before Using

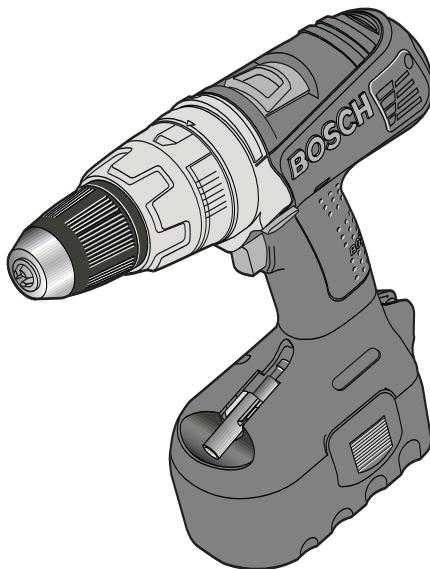
IMPORTANT :
Lire avant usage

IMPORTANTE:
Leer antes de usar



Operating/Safety Instructions
Consignes de fonctionnement/sécurité
Instrucciones de funcionamiento y seguridad

13614
13618
13624



BOSCH

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Pour renseignement des
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para el consumidor y
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1-877-BOSCH99 (1-877-267-2499) www.boschtools.com

General Safety Rules

⚠ WARNING **Read all instructions. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.** The term "power tool" in all of the warnings listed below refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

SAVE THESE INSTRUCTIONS

Work area safety

Keep work area clean and well lit. Cluttered or dark areas invite accidents.

Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.

Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

Electrical safety

Power tool plugs must match the outlet. Never modify the plug in any way. **Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.

Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.

Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.

Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. **Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.

When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.

Do not use AC only rated tools with a DC power supply. While the tool may appear to work, the electrical components of the AC rated tool are likely to fail and create a hazard to the operator.

If operating the power tool in damp locations is unavoidable a **Ground Fault Circuit Interrupter (GFCI)** must be used to supply the power to your tool. GFCI and personal protection devices like electrician's rubber gloves and footwear will further enhance your personal safety.

Personal safety

Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.

Use safety equipment. Always wear eye protection. Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

Avoid accidental starting. Ensure the switch is in the off-position before plugging in. Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.

Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.

Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts.

If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of these devices can reduce dust-related hazards.

Keep handles dry, clean and free from oil and grease. Slippery hands cannot safely control the power tool.

Power tool use and care

Do not force the power tool. Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed.

Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.

Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.

Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.

Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation.

Use clamps or other practical way to secure and support the workpiece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.

Battery tool use and care

Recharge only with the charger specified by the manufacturer. A charger that is suitable for one type of battery pack may create a risk of fire when used with another battery pack.

Use battery tools only with specifically designated battery packs. Use of any other battery packs may create a risk of injury and fire.

When battery pack is not in use, keep it away from other metal objects like paper clips, coins, keys, nails, screws, or other small metal objects that can make a connection from one terminal to another. Shorting the battery terminals together may cause burns or a fire.

Under abusive conditions, liquid may be ejected from the battery, avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.

Ensure the switch is in the off position before inserting battery pack. Inserting the battery pack into power tools that have the switch on invites accidents.

Service

Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.

Develop a periodic maintenance schedule for your tool. When cleaning a tool be careful not to disassemble any portion of the tool since internal wires may be misplaced or pinched or safety guard return springs may be improperly mounted. Certain cleaning agents such as gasoline, carbon tetrachloride, ammonia, etc. may damage plastic parts.

SAVE THESE INSTRUCTIONS

Safety Rules for Cordless Hammer Drills

Hold tool by insulated gripping surfaces when performing an operation where the cutting tools may contact hidden wiring. Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator. *Do not drill, fasten or break into existing walls or other blind areas where electrical wiring may exist. If this situation is unavoidable, disconnect all fuses or circuit breakers feeding this worksite.*

Wear ear protectors when using the tool for extended periods. Prolonged exposure to high intensity noise can cause hearing loss.

Always use auxiliary handle for maximum control over torque reaction or kick-back. High torque 3/8" and larger chuck capacity drills are equipped with auxiliary handles.

Always wear safety goggles or eye protection when using this tool. Use a dust mask or respirator for applications which generate dust.

Use thick cushioned gloves and limit the exposure time by taking frequent rest periods. Vibration caused by hammer-drill action may be harmful to your hands and arms.

Secure the material being drilled. Never hold it in your hand or across legs. Unstable support can cause the drill bit to bind causing loss of control and injury.

Disconnect battery pack from tool or place the switch in the locked or off position before making any assembly, adjustments or changing accessories. Such preventive safety measures reduce the risk of starting the tool accidentally.

Position yourself to avoid being caught between the tool or side handle and walls or posts. Should the bit become bound or jammed in the work, the reaction torque of the tool could crush your hand or leg.

If the bit becomes bound in the workpiece, release the trigger immediately, reverse the direction of rotation and slowly squeeze the trigger to back out the bit. Be ready for a strong reaction torque. The drill body will tend to twist in the opposite direction as the drill bit is rotating.

Do not grasp the tool or place your hands too close to the spinning chuck or drill bit. Your hand may be lacerated.

When installing a drill bit, insert the shank of the bit well within the jaws of the chuck. If the bit is not inserted deep enough, the grip of the jaws over the bit is reduced and the loss of control is increased.

Do not use dull or damaged bits and accessories. Dull or damaged bits have a greater tendency to bind in the workpiece.

When removing the bit from the tool avoid contact with skin and use proper protective gloves when grasping the bit or accessory. Accessories may be hot after prolonged use.

Check to see that keys and adjusting wrenches are removed from the drill before switching the tool "ON". Keys or wrenches can fly away at high velocity striking you or a bystander.

Do not run the tool while carrying it at your side. A spinning drill bit could become entangled with clothing and injury may result.

⚠ WARNING Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints,
- Crystalline silica from bricks and cement and other masonry products, and
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

Battery/Charger

Before using battery charger, read all instructions and cautionary markings on (1) battery charger, (2) battery pack, and (3) product using battery.

Use only the charger which accompanied your product or direct replacement as listed in the catalog or this manual. Do not substitute any other charger. Use only Bosch approved chargers with your product. See Functional Description and Specifications.

Do not disassemble charger or operate the charger if it has received a sharp blow, been dropped or otherwise damaged in any way. Replace damaged cord or plugs immediately. Incorrect reassembly or damage may result in electric shock or fire.

Do not recharge battery in damp or wet environment. Do not expose charger to rain or snow. If battery case is cracked or otherwise damaged, do not insert into charger. Battery short or fire may result.

Charge only Bosch approved rechargeable batteries. See Functional Description and Specifications. Other types of batteries may burst causing personal injury and damage.

Charge battery pack in temperatures above +40 degrees F (4 degrees C) and below +105 degrees F (41 degrees C). Store tool and battery pack in locations

where temperatures will not exceed 120 degrees F (49 degrees C). This is important to prevent serious damage to the battery cells.

Battery leakage may occur under extreme usage or temperature conditions. Avoid contact with skin and eyes. The battery liquid is caustic and could cause chemical burns to tissues. If liquid comes in contact with skin, wash quickly with soap and water, then with lemon juice or vinegar. If the liquid contacts your eyes, flush them with water for a minimum of 10 minutes and seek medical attention.

Place charger on flat non-flammable surfaces and away from flammable materials when re-charging battery pack. The charger and battery pack heat during charging. Carpeting and other heat insulating surfaces block proper air circulation which may cause overheating of the charger and battery pack. If smoke or melting of the case are observed unplug the charger immediately and do not use the battery pack or charger.

Use of an attachment not recommended or sold by Bosch may result in a risk of fire, electric shock or injury to persons.

Battery Care

⚠ WARNING When batteries are not in tool or charger, keep them away from metal objects. For example, to protect terminals from shorting **DO NOT** place batteries in a tool box or pocket with nails, screws, keys, etc. Fire or injury may result.

⚠ WARNING To prevent fire or injury when batteries are not in tool or charger, always place protective cap onto end of battery pack. Protective cap, guards against terminal shorting.

DO NOT PUT BATTERIES INTO FIRE OR EXPOSE TO HIGH HEAT. They may explode.

Battery Disposal

A WARNING Do not attempt to disassemble the battery or remove any component projecting from the battery terminals. Fire or injury may result. Prior to disposal, protect exposed terminals with heavy insulating tape to prevent shorting.

NICKEL-CADMIUM BATTERIES

If equipped with a nickel-cadmium battery, the battery must be collected, recycled or disposed of in an environmentally sound manner.



"The EPA certified RBRC Battery Recycling Seal on the nickel-cadmium (Ni-Cd) battery indicates Robert Bosch Tool Corporation is voluntarily participating in an industry program to collect and recycle these batteries at the end of their useful life, when taken out of service in the United States or

Canada. The RBRC program provides a convenient alternative to placing used Ni-Cd batteries into the trash or the municipal waste stream, which may be illegal in your area.

Please call 1-800-8-BATTERY for information on Ni-Cd battery recycling and disposal bans/restrictions in your area, or return your batteries to a Skil/Bosch/Dremel Service Center for recycling. Robert Bosch Tool Corporation's involvement in this program is part of our commitment to preserving our environment and conserving our natural resources."

NICKEL-METAL HYDRIDE BATTERIES

If equipped with a nickel-metal hydride battery, the battery can be disposed of in a municipal solid waste stream.

Symbols

IMPORTANT: Some of the following symbols may be used on your tool. Please study them and learn their meaning. Proper interpretation of these symbols will allow you to operate the tool better and safer.

Symbol	Name	Designation/Explanation
V	Volts	Voltage (potential)
A	Amperes	Current
Hz	Hertz	Frequency (cycles per second)
W	Watt	Power
kg	Kilograms	Weight
min	Minutes	Time
s	Seconds	Time
Ø	Diameter	Size of drill bits, grinding wheels, etc.
n_0	No load speed	Rotational speed, at no load
.../min	Revolutions or reciprocation per minute	Revolutions, strokes, surface speed, orbits etc. per minute
0	Off position	Zero speed, zero torque...
1, 2, 3, ... I, II, III,	Selector settings	Speed, torque or position settings. Higher number means greater speed
◀	Infinitely variable selector with off	Speed is increasing from 0 setting
→	Arrow	Action in the direction of arrow
~	Alternating current	Type or a characteristic of current
==	Direct current	Type or a characteristic of current
~	Alternating or direct current	Type or a characteristic of current
□	Class II construction	Designates Double Insulated Construction tools.
⊕	Earthing terminal	Grounding terminal
!	Warning symbol	Alerts user to warning messages
	Ni-Cad RBRC seal	Designates Ni-Cad battery recycling program



This symbol designates that this tool is listed by Underwriters Laboratories.



This symbol designates that this tool is listed to Canadian Standards by Underwriters Laboratories.



This symbol designates that this tool is listed by the Canadian Standards Association.



This symbol designates that this tool is listed by Underwriters Laboratories, and listed to Canadian Standards by Underwriters Laboratories.



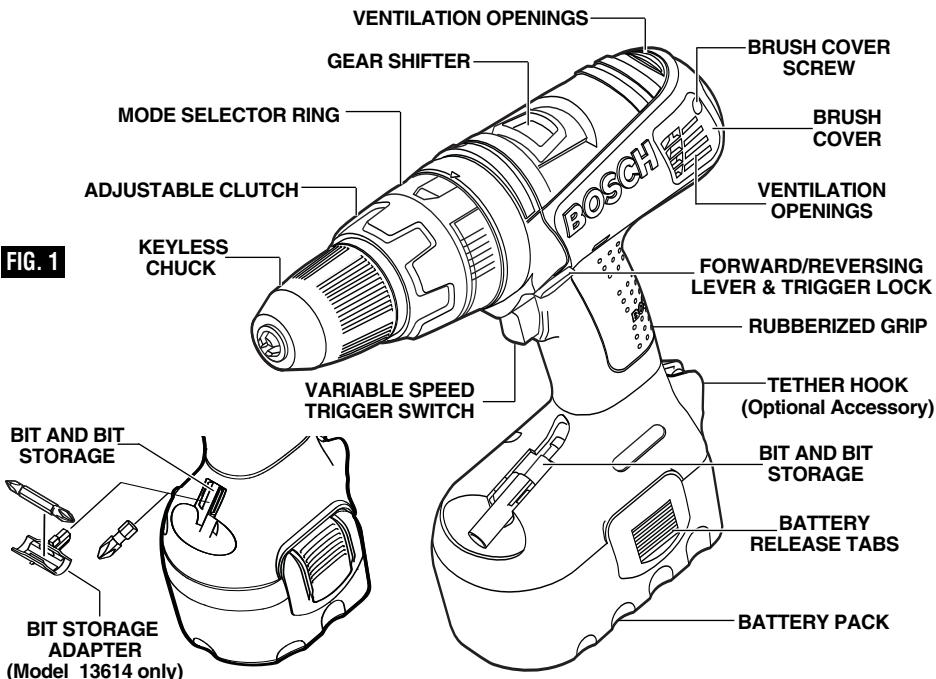
This symbol designates that this tool complies to NOM Mexican Standards.

Functional Description and Specifications

WARNING Disconnect battery pack from tool or place the switch in the locked or off position before making any assembly, adjustments or changing accessories. Such preventive safety measures reduce the risk of starting the tool accidentally.

Cordless Hammer Drills

FIG. 1



Model number	13614	13618	13624
Voltage rating	14.4 V ===	18 V ===	24V==
No load speed 1	n_0 0-450/min	n_0 0-450/min	n_0 0-450/min
No load speed 2	n_0 0-1500/min	n_0 0-1500/min	n_0 0-1500/min
Charge time	1 hr.	1 hr.	1 hr.
Maximum Capacities			
Chuck size	1/2"	1/2"	1/2"
Screw sizes	#16 x 3"	#14 x 4"	#16 x 4"
Mild metal	1/2"	5/8"	3/4"
Hard wood	1-1/4"	1-5/8"	1-3/4"
Soft wood	1-3/4"	2"	2-1/4"
Charger	BC001-6 & BC016 BC130 & BC230	BC003, 4, 6, & BC016 BC130 & BC230	BC004, 6, & BC016 BC130 & BC230
Voltage rating	120 V ~ 60 Hz	120 V ~ 60 Hz	120 V ~ 60 Hz
Battery pack	BAT038 thru BAT041 BAT140 thru BAT159	BAT025 & BAT026 BAT160 thru BAT189	BAT030 & BAT031 BAT240 thru BAT299

BC006 charger requires 12 V DC input

NOTE: ONLY USE CHARGERS LISTED ABOVE

Operating Instructions

VARIABLE SPEED CONTROLLED TRIGGER SWITCH

Your tool is equipped with a variable speed trigger switch. The tool speed can be controlled from the minimum to the maximum nameplate RPM by the pressure you apply to the trigger. Apply more pressure to increase the speed and release pressure to decrease speed. This accurate speed control enables you to drill without center punching. It also permits you to use as a power screwdriver. Bits are available for driving screws as well as running bolts and nuts.

FORWARD/REVERSING LEVER & TRIGGER LOCK

Your tool is equipped with a forward/reversing lever and trigger lock located above the trigger (Fig. 1). This lever was designed for changing rotation of the chuck, and for locking the trigger in an "OFF" position to help prevent accidental starts and accidental battery discharge. For forward rotation, (with chuck pointed away from you) move the lever to the far left. For reverse rotation move the lever to the far right. To activate trigger lock move lever to the center off position.

CAUTION Do not change direction of rotation until the tool comes to a complete stop. Shifting during rotation of the chuck can cause damage to the tool.

GEAR SHIFTING

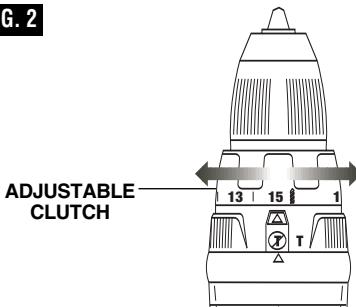
Your tool is equipped with two separate gear ranges, low gear and high gear. Low gear provides high-torque and slower drilling speeds for heavy duty work or for driving screws. High gear provides faster speeds for drilling lighter work. To change speeds slide switch, to the high or low position.

ATTENTION: If your tool appears to be running, but the chuck will not turn, check to make sure the gear shifting switch is pushed fully into desired setting.

ADJUSTABLE CLUTCH

Your tool features 15 clutch settings. Output torque will increase as the clutch ring, is rotated from 1 to 15. The drill "■■■■" position will lock up the clutch to permit drilling and driving heavyduty work, and also enables bits to be changed quickly and easily in the keyless chuck (Fig. 2).

FIG. 2



DRILL/HAMMER DRILL SELECTOR RING

The selector ring allows the tool to be set for various drilling/hammer drilling applications. Rotate the selector dial right or left depending on the below applications (Fig. 3).



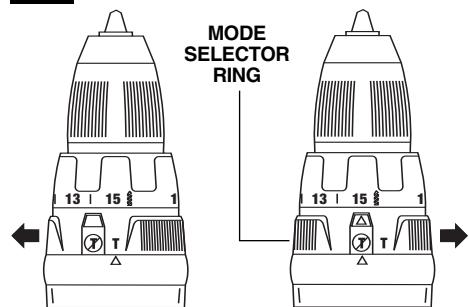
Drill only action: For drilling in woods, metals, plastics or other non concrete materials.



Drill with hammer action: For drilling in concrete, asphalt, tile or other similar hard materials.

The hammer drill position overrides the clutch for hammer drilling.

FIG. 3



BRAKE

When the trigger switch is released it activates the brake to stop the chuck quickly. This is especially useful in the repetitive driving and removal of screws.

BIT STORAGE ADAPTER

Your tool is equipped with a bit storage adapter that will allow you to store a longer bit if desired. To install bit adapter, remove bit from standard storage area, then snap adapter into it's place. To use, hold bit adapter in place when removing bit (Fig. 1).

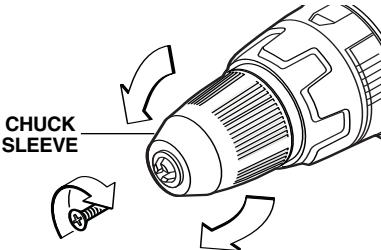
INSERTING BITS

Move reverse switch lever to the center "OFF" position. Remove battery pack and rotate the clutch ring to the drill bit symbol "■■■■". Rotate the chuck sleeve counterclockwise viewing from chuck end, and open chuck to approximate drill bit diameter. Insert a clean bit up to the drill bit flutes for small bits, or as far as it will go for large bits. Close chuck by rotating the chuck sleeve clockwise and securely tighten by hand (Fig. 4).

WARNING Do not use the power of the drill while grasping

chuck to loosen or tighten bit. Friction burn or hand injury is possible if attempting to grasp the spinning chuck.

FIG. 4



REMOVING CHUCK

Rotate the clutch ring to the drill bit symbol "■■■■". Open the chuck all the way, remove left-hand thread screw inside chuck by turning it clockwise (Fig. 4).

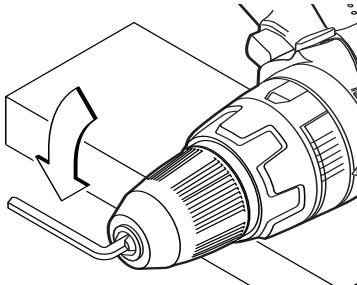
Insert the short arm of a 1/2" hex key wrench and close jaws on flats of wrench (Fig. 5). Strike long arm of wrench sharply counterclockwise, remove wrench and unthread chuck from spindle.

INSTALLING CHUCK

Always keep the spindle threads, the threads of the chuck and securing screw free of

debris. To install a chuck, reverse "removing the chuck" procedure.

FIG. 5



RELEASING AND INSERTING BATTERY PACK

Release battery pack from tool by pressing on both sides of the battery release tabs and pull downwards. Before inserting battery pack, remove protective cap from battery pack.

To insert battery, align battery and slide battery pack into tool until it locks into position. Do not force.

IMPORTANT CHARGING NOTES

1. The battery pack accepts only about 80% of its maximum capacity with its first few charge cycles. However, after the first few charge cycles, the battery will charge to full capacity.
2. The charger was designed to fast charge the battery only when the battery temperature is between 40°F (4°C) and 105°F (41°C).
3. A substantial drop in operating time per charge may mean that the battery pack is nearing the end of its life and should be replaced.
4. If you anticipate long periods (i.e. a month or more) of non-use of your tool, it is best to run your tool down until it is fully discharged before storing your battery pack. After a long period of storage, the capacity at first recharge will be lower. Normal capacity will be restored in two or three charge/discharge cycles.

Remember to unplug charger during storage period.

5. If battery does not charge properly:
 - a. Check for voltage at outlet by plugging in some other electrical device.
 - b. Check to see if outlet is connected to a light switch which turns power "off" when lights are turned off.
 - c. Check battery pack terminals for dirt. Clean with cotton swab and alcohol if necessary.
 - d. If you still do not get proper charging, take or send tool, battery pack and charger to your local Bosch Service Center. See "Tools, Electric" in the Yellow Pages for names and addresses.

Note: Use of chargers or battery packs not sold by Bosch will void the warranty.

CHARGING BATTERY PACK (30 MINUTE SINGLE BAY-BC130)

INDICATORS, SYMBOLS AND MEANING

If the indicator lights are "OFF", the charger is not receiving power from power supply outlet.



If the green indicator light is "ON", the charger is plugged in but the battery pack is not inserted, or the battery pack is fully charged and is being trickle charged.



If the green indicator light is "BLINKING", the battery pack is being fast-charged. Fast-charging will automatically stop when the battery pack is fully charged.

Plug charger cord into your standard power outlet. Before inserting battery pack, remove protective cap, then insert battery pack into charger (Fig. 6).

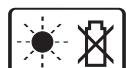
The charger's green indicator light will begin to "BLINK". This indicates that the battery is receiving a fast charge. Fast-charging will automatically stop when the battery pack is fully charged.

When the indicator light stops "BLINKING" (and becomes a steady green light) fast charging is complete.

The battery pack may be used even though the light may still be blinking. The light may require more time to stop blinking depending on temperature. When you begin the charging process of the battery pack, a steady red light



If the red indicator light is "ON", the battery pack is too hot or cold for fast-charging. The charger will switch to trickle charge, until a suitable temperature is reached, at which time the charger will switch automatically to fast-charging.



If the red indicator light is "BLINKING", the battery pack cannot accept a charge or the contacts of the charger or battery pack are contaminated. Clean the contacts of the charger or battery pack only as directed in these operating instructions or those supplied with your tool or battery pack.

could also mean the battery pack is too hot or too cold.

The purpose of the green light is to indicate that the battery pack is fast-charging. It does not indicate the exact point of full charge. The light will stop blinking in less time if the battery pack was not completely discharged.

When charging several batteries in sequence, the charge time may slightly increase.

When the battery pack is fully charged, unplug the charger (unless you're charging another battery pack) and slip the battery pack back into the tool.

To prevent fire or injury when batteries are not in tool or charger, always place protective cap onto end of battery pack.

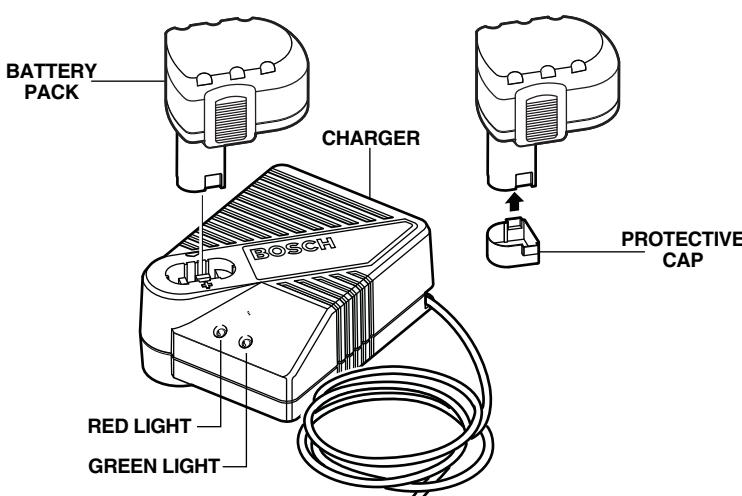


FIG. 6

CHARGING BATTERY PACK (30 MINUTE DUAL BAY-BC230)

INDICATORS, SYMBOLS AND MEANING

If the indicator lights are "OFF", the charger is not receiving power from power supply outlet.



If the red indicator light is "ON", the battery pack is too hot or cold for fast-charging.

The charger will switch to trickle charge, until a suitable temperature is reached, at which time the charger will switch automatically to fast-charging.



If the red indicator light is "BLINKING", the battery pack cannot accept a charge or the contacts of the charger or battery pack

Plug charger cord into your standard power outlet. Before inserting battery pack, remove protective cap, then insert battery pack into charger (Fig. 7).

The charger's green indicator light will begin to "BLINK". This indicates that the battery is receiving a fast charge. Fast-charging will automatically stop when the battery pack is fully charged.

When the indicator light stops "BLINKING" (and becomes a steady green light) fast charging is complete.

The battery pack may be used even though the light may still be blinking. The light may require more time to stop blinking depending on temperature. When you begin the charging process of the battery pack, a

steady red light could also mean the battery pack is too hot or too cold.

The purpose of the green light is to indicate that the battery pack is fast-charging. It does not indicate the exact point of full charge. The light will stop blinking in less time if the battery pack was not completely discharged.

When charging several batteries in sequence, the charge time may slightly increase.

When the battery pack is fully charged, unplug the charger (unless you're charging another battery pack) and slip the battery pack back into the tool.

To prevent fire or injury when batteries are not in tool or charger, always place protective cap onto end of battery pack.

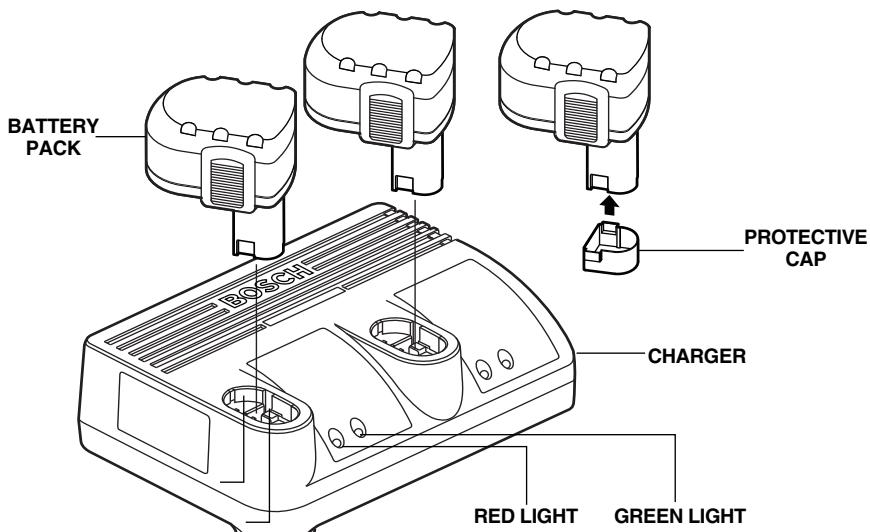


FIG. 7

CHARGING BATTERY PACK (1 HOUR CHARGER)

INDICATORS, SYMBOLS AND MEANING

If the indicator lights are "OFF", the charger is not receiving power from power supply outlet.

 If the green indicator light is "ON", the charger is plugged in but the battery pack is not inserted, or the battery pack is fully charged and is being trickle charged, or the battery pack is too hot or cold for fast-charging. The charger will

switch to trickle charge, until a suitable temperature is reached, at which time the charger will switch automatically to fast-charging.

 If the green indicator light is "BLINKING", the battery pack is being fast-charged. Fast-charging will automatically stop when the battery pack is fully charged.

Plug charger cord into your standard power outlet. Before inserting battery pack, remove protective cap, then insert battery pack into charger (Fig. 8).

The charger's green indicator will begin to "BLINK". This indicates that the battery is receiving a fast charge. Fast-charging will automatically stop when the battery pack is fully charged.

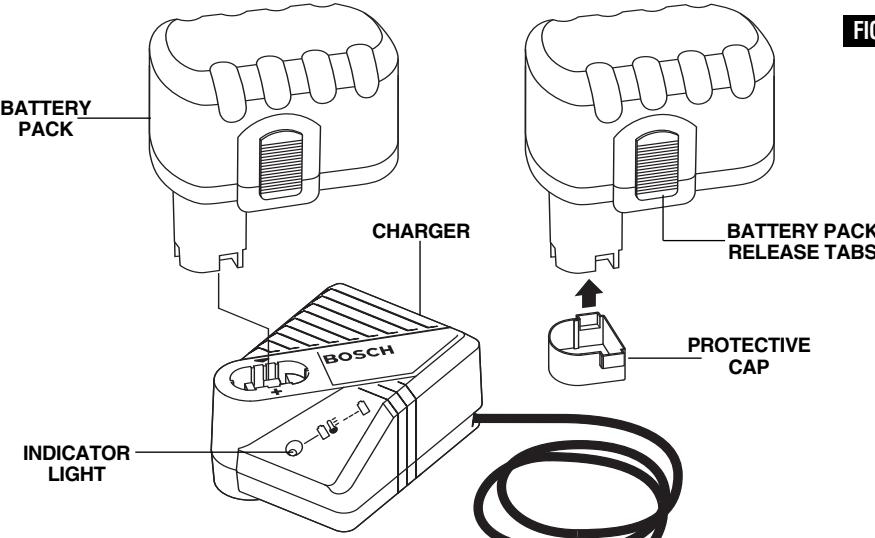
When the indicator light stops "BLINKING" (and becomes a steady green light) fast charging is complete.

When you begin the charging process of the battery pack, a steady green light could also mean the battery pack is too hot or too cold.

The purpose of the light is to indicate that the battery pack is fast-charging. It does not indicate the exact point of full charge. The light will stop blinking in less time if the battery pack was not completely discharged.

When the battery pack is fully charged, unplug the charger (unless you're charging another battery pack) and slip the battery pack back into the tool handle (Fig.8).

To prevent fire or injury when batteries are not in tool or charger, always place protective cap onto end of battery pack.



Operating Tips

TETHER HOOK

The purpose of the tether hook is to secure the tool when working on ladders, scaffolding, or elevated heights to prevent the tool from hitting the ground if accidentally dropped. For best results, it is recommended to use 1/4" braided nylon rope or similar material.

You will extend the life of your bits and do neater work if you always put the bit in contact with the work before pulling the trigger. During the operation, hold the tool firmly and exert light, steady pressure. Too much pressure at low speed will stall the tool. Too little pressure will keep the bit from cutting and cause excess friction by sliding over the surface. This can be damaging to both tool and bit.

FASTENING WITH SCREWS

This procedure shown in (Fig. 9) will enable you to fasten materials together with your Cordless Drill/Screwdriver without stripping, splitting or separating the material.

First, clamp the pieces together and drill the first hole 2/3 the diameter of the screw. If the material is soft, drill only 2/3 the proper length. If it is hard, drill the entire length.

Second, unclamp the pieces and drill the second hole the same diameter as the screw shank in the first or top piece of wood.

Third, if flat head screw is used, countersink the hole to make the screw flush with the surface. Then, simply apply even pressure when driving the screw. The screw shank clearance hole in the first piece allows the screw head to pull the pieces tightly together.

The adjustable screw drill accessory will do all of these operations quickly and easily.

DRILLING WITH VARIABLE SPEED

The trigger controlled variable speed feature will eliminate the need for center punches in hard materials. The variable speed trigger allows you to slowly increase RPM. By using a slow starting speed, you are able to keep the bit from "wandering". You can increase the speed as the bit "bites" into the work by squeezing the trigger.

DRIVING WITH VARIABLE SPEED

Variable speed drills will double as a power screwdriver by using a screwdriver bit in the drill mode. The technique is to start slowly, increasing the speed as the screw runs down. Set the screw snugly by slowing to a stop. Prior to driving screws, pilot and clearance holes should be drilled.

Screw drills are available for screw sizes No. 6, 8, 10 and 12.

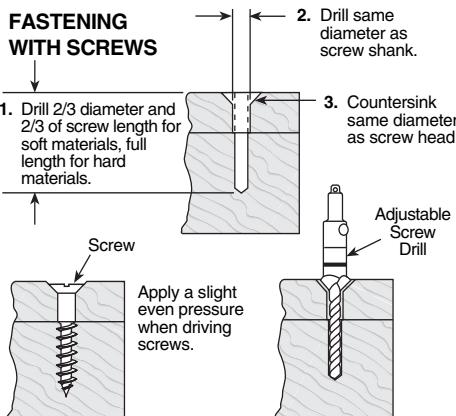


FIG. 9

DRILL BITS

Always inspect drill bits for excessive wear. Use only bits that are sharp and in good condition.

TWIST BITS: Available with straight and reduced shanks for wood and light duty metal drilling. High speed bits cut faster and last longer on hard materials.

CARBIDE TIPPED BITS: Used for drilling stone, concrete, plaster, cement and other

unusually hard nonmetals. Use continuous heavy feed pressure when employing carbide tip bits.

DRILLING WOOD

Be certain workpiece is clamped or anchored firmly. Always apply pressure in a straight line with the drill bit. Maintain enough pressure to keep the drill "biting".

When drilling holes in wood, twist bits can be used. Twist bits may overheat unless pulled out frequently to clear chips from flutes.

Use a "back-up" block of wood for work that is likely to splinter, such as thin materials.

You will drill a cleaner hole if you ease up on the pressure just before the bit breaks through the wood. Then complete the hole from the back side.

DRILLING METAL

There are two rules for drilling hard materials. First, the harder the material, the greater the pressure you need to apply to the tool. Second, the harder the material, the slower the speed.

Here are a couple of tips for drilling in metal. Lubricate the tip of the bit occasionally with cutting oil except when drilling soft metals such as aluminum, copper or cast iron. If the hole to be drilled is fairly large, drill a smaller hole first, then enlarge to the required size, it's often faster in the long run. Maintain enough pressure to assure that the bit does not just spin in the hole. This will dull the bit and greatly shorten its life.

DRILLING MASONRY

Soft materials such as brick are relatively easy to drill. Concrete however, will require much more pressure to keep the bit from spinning. Be sure to use carbide tip bits for all masonry work.

WARNING Before using an accessory, be certain that its maximum safe operating speed is not exceeded by the nameplate speed of the tool. Do not exceed the recommended wheel diameter.

SANDING AND POLISHING

Fine sanding and polishing require "touch". Select the most efficient speed.

When using polishing bonnets, always be sure the excess string that secures the bonnet is tucked well within the bonnet during operation.

WIRE BRUSHES

Work with brushes requires high speeds.

BRUSHING PRESSURE

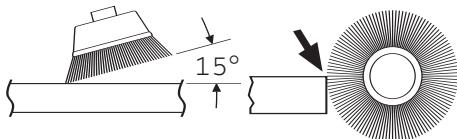
1. Remember, the tips of a wire brush do the work. Operate the brush with the lightest pressure so only the tips of the wire come in contact with the work.

2. If heavier pressures are used, the wires will be overstressed, resulting in a wiping action; and if this is continued, the life of the brush will be shortened due to wire fatigue.

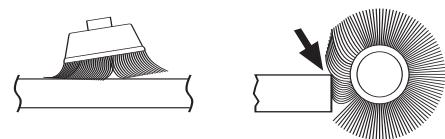
3. Apply the brush to the work in such a way that as much of the brush face as possible is in full contact with the work. Applying the side or edge of the brush to the work will

result in wire breakage and shortened brush life.

CORRECT: Wire tips doing the work.



INCORRECT: Excessive pressure can cause wire breakage.



RUNNING NUTS AND BOLTS

Variable speed control must be used with caution for driving nuts and bolts with socket set attachments. The technique is to start slowly, increasing speed as the nut or bolt runs down. Set the nut or bolt snugly by slowing the drill to a stop. If this procedure is not followed, the tool will have a tendency to torque or twist in your hands when the nut or bolt seats.

Maintenance

Service

WARNING **NO USER SERVICEABLE PARTS INSIDE**, except for the replaceable carbon brushes. Preventive maintenance performed by unauthorized personnel may result in misplacing of internal wires and components which could cause serious hazard. We recommend that all tool service be performed by a Bosch Factory Service Center or Authorized Bosch Service Station. **SERVICEMEN:** Disconnect tool and/or charger from power source before servicing.

BATTERIES

Be alert for battery packs that are nearing their end of life. If you notice decreased tool performance or significantly shorter running time between charges then it is time to replace the battery pack. Failure to do so can cause the tool to operate improperly or damage the charger.

Long term battery storage should be in the discharged state. Battery packs last longer and re-charge better when they are stored discharged. Remember to fully recharge battery packs before using after prolonged storage.

TOOL LUBRICATION

Your Bosch tool has been properly lubricated and is ready for use.

D.C. MOTORS

The motor in your tool has been engineered for many hours of dependable service. To maintain peak efficiency of the motor, we recommend it be examined every six months. Only a genuine Bosch replacement motor specially designed for your tool should be used.

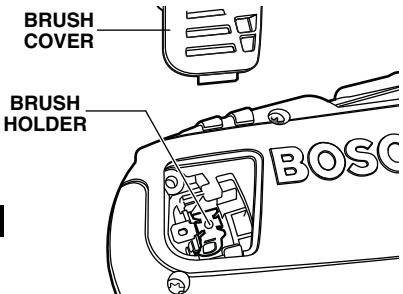
CARBON BRUSHES

The brushes and commutator in your tool have been engineered for many hours of dependable service.

If your tool runs sporadically, loses power, makes unusual noises or runs at a reduced speed, check the brushes. To continue using the tool in this condition will permanently damage your tool.

Check both brushes. Usually the brushes will not wear out simultaneously. If one brush is worn out, replace both brushes.

To check brushes: Disconnect battery pack from tool. Remove brush cover at the rear part of housing by loosening screws (Fig. 9).



Insert a screwdriver or similar object into the red notch of the carbon brush and lift out the brushes; note which way they face, so that the brushes can be returned to their original position. Clean the brush holder openings with compressed air or a clean cloth and replace the brushes and brush covers.

After replacing brushes the tool should be run at no-load and run it freely at full speed for 2 minutes before using the tool. This will allow the brushes to "seat" properly and will give you more hours of life from each set of brushes.

Only genuine Bosch replacement brushes specially designed for your tool should be used.

Cleaning

WARNING **To avoid accidents, always disconnect the tool and/or charger from the power supply before cleaning.** The tool may be cleaned most effectively with compressed dry air. **Always wear safety goggles when cleaning tools with compressed air.**

Ventilation openings and switch levers must be kept clean and free of foreign matter. Do not attempt to clean by inserting pointed objects through opening.

CAUTION **Certain cleaning agents and solvents damage plastic parts.** Some of these are: gasoline, carbon tetrachloride, chlorinated cleaning solvents, ammonia and household detergents that contain ammonia.

Accessories

⚠ WARNING If an extension cord is necessary, a cord with adequate size conductors that is capable of carrying the current necessary for your tool must be used. This will prevent excessive voltage drop, loss of power or overheating. Grounded tools must use 3-wire extension cords that have 3-prong plugs and receptacles.

NOTE: The smaller the gauge number, the heavier the cord.

RECOMMENDED SIZES OF EXTENSION CORDS 120 VOLT ALTERNATING CURRENT TOOLS

Tool's Ampere Rating	Cord Size in A.W.G.				Wire Sizes in mm ²			
	Cord Length in Feet				Cord Length in Meters			
	25	50	100	150	15	30	60	120
3-6	18	16	16	14	0.75	0.75	1.5	2.5
6-8	18	16	14	12	0.75	1.0	2.5	4.0
8-10	18	16	14	12	0.75	1.0	2.5	4.0
10-12	16	16	14	12	1.0	2.5	4.0	—
12-16	14	12	—	—	—	—	—	—

(* = standard equipment)

(** = optional accessories)

* Screwdriver bit

* Carrying case

** Tether hook

** 15 minute charger

** 30 minute charger (single bay)

** 30 minute charger (dual bay)

** 1 hour charger

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